



Agenda Item 1A:

Current situation and regional priorities

**FOLLOW-UP ON THE IMPLEMENTATION OF ENVIRONMENTAL SUSTAINABILITY
IMPROVEMENTS IN AVIATION IN THE SAM STATES**

(Presented by Venezuela)

SUMMARY

This paper sets forth the importance of working together on the development of technological innovations to reduce CO₂ emissions for international environmental sustainability.

Suggested action

The Meeting is invited to:

- a) take note of the information contained in this working paper;
- b) foster actions to facilitate access to new technologies, and promote the exchange of best practices and experiences that will contribute to improve efficiency in the reduction of CO₂ emissions; and
- c) take any other action it may deem appropriate.

References:

- Annex 16, Volume II — Aircraft engine emissions
- Annex 16, Volume III — Aeroplane CO₂ emissions
- Resolution A41-20: Consolidated statement of continuing ICAO policies and practices related to environmental protection — General provisions, noise and local air quality.

**ICAO strategic
objective:**

- *Environmental protection*

1. Background

1.1 Resolution A41-20 of the Forty-first Session of the ICAO Assembly recognises that in carrying out their responsibilities, ICAO and its member States shall endeavour to:

- a) limit or reduce the impact of aviation emissions on local air quality;
- b) limit or reduce the impact of aviation greenhouse gas emissions on global climate.

1.2 Thus, from the perspective of Venezuela, the work of ICAO in relation to environmental protection, specifically on engine emissions, should continue to promote innovation in the technological development of propulsion systems to make them more efficient in terms of fuel consumption, in improvements related to aircraft equipment to enable more efficient flights, and in the development of air navigation procedures to ensure shorter flight times through more direct routes.

2. Discussion

2.1 States in the SAM Region must consider that many of the adverse effects of civil aviation on the environment can be more effectively reduced through the implementation of comprehensive measures, including technological developments, air traffic management procedures and more efficient operations.

2.2 The aviation industry faces a future characterised by the development of aircraft and engines capable of meeting pollutant emission reduction targets while maintaining operational levels. To meet these challenges, current research is focused on the use of technology in the design and manufacture of aircraft, on the implementation of new materials, on digitalisation, on the development of state-of-the-art technologies and on energy storage and management. All this would require addressing the challenge of upgrading fleets with state-of-the-art aircraft. In short, technological development could bring us closer to the goal of zero emissions through more efficient propulsion systems, lighter aircraft and, in addition to this, technological developments in air traffic management.

2.3 Aeronautical development is currently focusing on three areas:

- a) **Environmental efficiency:** drastic reduction of emissions (aviation is currently responsible for 2% of total CO₂ emissions). Work is underway to bring aviation's net carbon emissions to half of what they were in 2005 by 2050.
- b) **Energy efficiency:** reducing consumption, the main factor in the cost of operating aircraft.
- c) **Price competitiveness without sacrificing safety:** to keep aviation as the safest means of transport.

2.4 There are many lines of work to meet these objectives, one of which is to design and manufacture more efficient aircraft, in order to reduce aerodynamic drag and thus increase energy efficiency. Among the ideas under development are technologies to optimise air route paths or to improve laminar aerodynamic flow around the aircraft, in order to reduce aerodynamic drag by 50% and CO₂ generation by 5%.

2.5 While various options for emission reductions are presented globally and regionally, it is considered that all technological options should be given higher priority and opportunity for access by States as the most effective mechanisms for reducing the impact of greenhouse gas emissions from aviation on the global climate.

3. Suggested action

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- c) take any other action it may deem appropriate.